August 197

DRIVER

VACATION DRIVING with the CHP

DRIVER

Some tips from the pros on how to survive your vacation. Our pros happen to be in California, but accident causes are the same everywhere.

(above)
Whether it's a weekend jaunt with just an overnight bag . . .

Or a long-awaited cross-country trip to see Aunt Ethel, proper pre-trip planning is a must.

vacation driving with the CHP

(left)
Good maps are available from the AAA, local auto clubs, or your insurance agent. Make a generalized itinerary and give it to a neighbor or friend so that, in case of an emergency, they have a better chance to contact you.

As we pulled out of the parking lot at California Highway Patrol headquarters in San Bernardino, Calif., Officer John Savage deftly herded the big Dodge Monaco patrol car in behind an out-of-state camper/trailer being pulled (barely) by a new '77 compact station wagon.

"Nine will get you ten that he's stopping for gas and grousing to his family about how this rig eats more gas than Alaska can supply," Officer Savage observed. He was right. As we talked with the driver of the camper rig, the gas pump was going "ding, ding, ding" and the attendant was smiling.

"I thought I bought a gas-saver," lamented the driver. "I never imagined that it wouldn't have enough power to pull a trailer without working itself to death."

All the Time: Officer Savage and his fellow Highway Patrolmen see this kind of thing all the time, and they consider it just a small part of what they call the "Case of the Unhappy Vacationer."

As a matter of fact, the CHP assisted over 10,000 unhappy motorists and their broken-down cars during the Memorial Day holiday alone.

According to Officer Savage, the vast majority of these breakdowns could have been avoided. Very few were caused by sources not controllable by the driver.

What can you do to make your next vacation safer and more relaxing? For a start, read "Vacationtime Trip Planning" in the June '76 issue of DRIVER . . . it has some good, hard-core car preparation tips, as well as clues on roadside emergencies and hints on ways to avoid rip-off mechanical repairs. (You'll find a copy in your base library.) Then, peruse the following tips offered by Officer Savage and the California Highway Patrol . . . your trip will go better, and your vacation will be memorable for the fun you had and not for the troubles you encountered.

Four Breakdown Causes: "The majority of breakdowns that travelers encounter fall into four categories," says Capt Donald Kipp, Commander of the San Bernardino Area CHP. "Flat tires, broken fan belts, and burst radiator or heater hoses are the troublemakers."

According to Officer Savage, these problems are not unique to the San Bernardino, or low desert, areas, where DRIVER hangs out. "Some people think that, just because they won't be traveling in a desert area, they won't encounter these problems. Not so . . . I've seen tourists (as well as native Californians) at the side of the road, overheated, in Northern California during the cool fall months . . . just as many as I see near the Mojave.

"We assist as many people as we can, but of course we'd rather be out patrolling the highway. Some people are under the misconception that we provide emergency roadside repair service . . . we don't. We *will* assist in a tire change if the operator of the vehicle is disabled or physically unable to change a tire, and if all the tire changing equipment is present. In the case of an overheat or similar breakdown, we'll radio for a repair truck. We also aid victims of mechanical problems by directing traffic around the stalled vehicle."

WHERE TO PARK?

DRIVER: If you *do* have a breakdown, where's the best place to park?

Savage: If a person has a flat tire, of course their first reaction is to stop. That's all well and good, assuming they're not in the fast lane! Believe it or not, we've had people stop the car right in the lane of traffic and stand there with their trunk up, waiting for us to come along. Well, they should use a little common-sense and realize that when a tire goes flat at freeway speeds, the tire is wasted anyway. They may as well continue along and get off to the right side of the road. Once off the road, they can examine the tire without fear of being run over. If the spare is bad, or if they can't change the tire, they just drive slowly along the shoulder until they reach an exit. It's not illegal (in California) to do that, and it makes more sense than exposing yourself to traffic hazards.

If you decide to park off the road to change a tire or whatever, do yourself a favor and get as far off the road as possible. I covered an accident last week where the vehicle fell off the jack onto the legs of the man who was changing his tire. He'd done several things wrong; he hadn't gotten far enough off the road, and he parked on a surface

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THE EDITOR SPEAKS

DOUBLE CLUTCH

CHOOSING YOUR COLORS

In the last year, three different motorists have plowed into the sturdy little Volvo owned by our editorial assistant. At no time was our Alice even slightly at fault. In fact, on one of the occasions she was en route home from a vacation in Texas and was peacefully sleeping in a motel room when she was awakened by the sickening sound or crumpling Swedish steel. Someone had creamed the Volvo at the dawning while it was parked in the motel lot!

Finally our smart Tech Editor came up with the answer: People weren't seeing the dark gray Volvo. It should have a new paint job. But what color would make it most visible? The staff was still arguing the relative merits of candy apple red and sunshine yellow when some information turned up from the engineers at Daimler-Benz in Germany. They have just completed tests of their own, in conjunction with their paint manufacturers, to learn what colors made cars most visible on the road. Here's what they learned:

No one color is best for all conditions, but generally the *lighter* and *brighter* a car is, the more easily it can be seen. Color contrast with the background matters only when there is adequate light. *Reflectance*, they determined, is the most important visibility factor under all conditions.

We see an object because it reflects light. Dark colors *absorb* more light; light colors *reflect* more light. While you might naturally conclude that light-colored cars are more visible than dark colored ones under any conditions, the Daimler-Benz study showed that's not necessarily so. In brilliant sunshine there is no significant visibility difference between dark and light colors.

Bright, pure tones of a color rank higher in visibility than grayed tones of the same color. Bright yellow or bright blue, for instance, are easier to see than mustard yellow or teal blue. Color contrast with the background is valuable in bright light, but

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continued

that wasn't level. When he got the car up in the air with the jack, a truck came along and the slip-stream just blew the car off the jack.

There's another reason for getting as far off the road as you can. Drunks have an annoying habit of rear-ending parked cars. If you're far off the road, the chances of that happening are lessened considerably. Also, don't stay in the car. If the car is hit with you in it—well, it's bad news. I'm not suggesting that if you have a bunch of kids, you let them run around on the shoulder of the road . . . you have to keep them under control. If you're disabled, particularly at night, get out of the car and stand where you can watch the oncoming traffic.

Another thing to remember is, if at all possible, get off the road on the right-hand shoulder. Drivers are *used* to seeing cars broken down on that side of the road, but *not* used to seeing them on the center divider. As a result, they hit the brake, gawk, and cause a chain-reaction accident.

DRIVER: Are there any other problems associated with breakdowns?

Savage: Definitely! Let's say you burst a radiator hose just outside of Desert Center. In the most "rural" of the areas we patrol, it may take up to two hours before a patrolman spots you. This is dangerous in itself, but it also creates another problem. Here you are, stuck in the middle of nowhere with a busted radiator hose . . . a patrolman picks you up and takes you into town. You go to the local garage to get a hose, but they're out of the one you need. The garage owner calls his buddy over in Outnback . . . he has one, but it takes three hours to go over and get it. By the time you get back to your car and get the new hose on, you've spent seven hours. That's an irritant, but the biggest problem is that you're now "behind schedule." You need three days to get back to Illinois and now you've only got two travel days left.

Being behind a real or imagined schedule is probably the biggest cause of travel accidents. You'll drive too fast, get too tired, but you'll keep going. It's a sure-fire way to get in trouble.

DRIVER: What can be done to prevent this problem?

Savage: Two things: one, see that your car is in shape before you go on your trip, and two, *allow extra time for the trip.*

A pre-trip car inspection isn't a bad idea. The CHP estimates that most mechanical failures could have been avoided just by doing a good inspection.

In other words, if the trip is expected to take three days, allow four days. If it's a there-n-back you're on, allow an extra hour.

Being behind schedule is kind of an attitude thing. If you're behind schedule and cruising along the interstate, you don't feel too bad. But if you get caught in a traffic jam or have a breakdown, the frustration level begins to mount. You take chances you sure as heck wouldn't ordinarily take.

A lot of the daytime accidents we have would seem to be caused by other factors. The accident report reads: "following too close" or "excessive speed." There may appear to be the causes, but the actual basic fault lies with the fact that the driver was behind schedule and was trying to make up time.

If you *do* experience difficulties, hey, don't take it out on the people ahead of you or beside you. If you're in a rush, a bad lane change can easily ruin someone else's day too. If you do succeed in avoiding the other guy, you may still make him upset enough to begin a chain reaction of discourteous behavior that can culminate in an accident.

DRIVER: Do emotions really make that much difference in a driver's performance?

Savage: Sure. If *you* cut somebody off, then he's gonna be upset, and the next time somebody needs a little extra space, he's gonna cut *them* off. If you make one bad turning movement or one bad choice of judgment, you can wind up with 50 people down the line who are affected because of your error.

If somebody does something that makes you mad, take an off-ramp, get out, kick the tires . . . don't let it fester inside you.

It's not uncommon to get a call to an accident scene on a freeway where the dispatcher will call us and say, "We have an accident with a 415 involved at such and such a location." In other words, there's a fight at the accident location. People will make a stupid mistake, and the next thing you know there are two cars pulled over with two drivers just whacking the daylights out of each other. It's simply because they haven't adjusted their attitude or controlled their emotions to a point where they're safe on the highway. I think it would be embarrassing to come home from a trip with a black eye and broken knuckles . . . and no dents in the car!

DRIVER: What's the difference between vacation driving and holiday driving?

Savage: The major cause of accidents during a holiday period, like the Fourth of July, is the drunk driver. Over half of our injury-producing or fatal accidents result from the use of alcohol. Vacation driving accidents are the secondary fault of speed which is not appropriate to conditions, with the primary fault lying with trying to catch up to a schedule.

If you must travel during a holiday period, *don't* travel at night, because that's when the majority of the "driving under the influence" accidents happen. If you have to drive, use the freeways and avoid surface streets like the plague.

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continued

Well, they're adhering to the letter, if not the spirit, of the rules about trip planning. An inspection of the windshield and a quick look at the map aren't exactly guaranteed to make your trip a pleasant one.

Local radio stations can be a good source of travel info. In the Los Angeles area, radio station KFI has excellent reports, both morning and afternoon, that can help you avoid traffic snarls and tie-ups.

Good trip planning will allow you to familiarize yourself with the different exit and entry ramp configurations you will encounter. At the start of each driving day, go over the maps of the proposed day's route so that the details will be fresh in your mind.

Bad weather that's not even in the immediate area can affect you, too. If it's raining in those mountains, be prepared for flash flood warnings in the adjacent low-desert areas.

Weather conditions can alter the complexion of your trip. A phone call to the Weather Service, or Highway Patrol or Sheriff's weather recording, can help you avoid delays. If you're driving a camper or towing a trailer, it would be nice to know, for instance, that high winds are expected in the area so that you may alter your plans accordingly.

This is one of your basic no-no's. You can't use the inside rearview mirror, and, in the event of a panic stop, all that stuff could come crashing forward over the seat and put you in a world of hurt.

There are a lot of good places to park along the freeway, *but this* (left) *ain't one of 'em!* Parking at the divergent intersection of two major freeways exposes you to drivers making last-minute choices in freeway use and adds the additional danger of the "gore point," or pointed portion of guardrail where the two roads join. Second picture (right) shows hitchhiker being let off. Thumber exposes himself to both traffic flows and still has to sprint across one freeway to get to the shoulder!

(right)
All that road shoulder available and the guy with the flat tire parks right next to the roadway! A gust from a passing truck could easily throw the car off the jack.

(above)
At least he did one thing right . . . he's chocked the wheels to help prevent the car from rolling.

The California Highway Patrol assisted over 10,000 stranded motirists just on the last Memorial Day alone. The CHP won't fix your busted radiator hose or your flat tire (except in unusual cases), but they will assist by radioing for help and directing traffic around your stalled vehicle.

Officer John Savage, San Bernardino Area Public Affairs officer for the California Highway Patrol, can tell as many stories about stranded vacationers as there are pebbles on the beaches of California.

Our studies have positively shown that during a holiday night, on a surface street, three out of every five drivers may be operating a vehicle while under the influence of alcohol or drugs. Those kind of odds aren't very good, but they improve slightly if you use the freeway system.

(Editor's note: At this point in our patrol, we saw the third dead animal of the day . . . we asked Officer Savage to comment.)

Time and time again, people drive down the freeway and see a dead dog or cat and say, "Isn't that a shame." The reason most of those animals are there is not because they wander out on the freeway . . . animals aren't that dumb. It's because they've jumped out of a car or truck . . . they're some traveler's pet.

People take the family pet along on a long trip and, naturally, the animal feels confined. The owner will roll down the window but won't make sure that the pet is on a leash. The poor animal sees another animal, or a passing car, and since he basically has no conception of speed, he'll lunge at whatever attracts his attention.

DRIVER: What are some other things to consider about vacation driving?

Savage: Pre-departure preparations can be as important as the trip itself. Well in advance of the day you want to leave, contact the AAA, your local auto club, or your automobile insurance agent and get an up-to-date set of road maps. The freeway system, not only here in California but all over the country, changes from year to year. If you took the same trip last summer and are used to off-ramps in a certain area, they may not be there this year.

- Plan your trip so that you know well in advance what off-ramps you want to take. We have had accidents that occurred because, and I'm sure your readers have seen it, people drive down the freeway with a roadmap spread out over the steering wheel. You can't see through a roadmap or make a last-minute lane change and exit without affecting other traffic.
- Be sure to let your neighbors know about your trip. Tell them the dates and destinations you planned. Everyone knows to stop newspaper and milk deliveries, but the ol' "leave the porch light on so burglars won't hit us" trick is wearing a bit thin. A porch light on day and night is an open invitation to the bad guys. They cruise neighborhoods just looking for things like this.
- Get your neighbor to go over to your house every evening and turn on a different light, and perhaps a radio, too. You may want to let your buddy or neighbor park his car in your driveway even though your second car is already there. A car that leaves during the day and then returns at night indicates that the house is occupied.
- Along with what I mentioned before about route planning, you might consider calling the weather service each morning before you leave the motel. The Highway Patrol has weather numbers for each geographical area. It's often nice to know that there'll be high winds in a certain mountain pass today, for instance, so you can avoid that area. If you plan to visit desert areas near the mountains, a weather report will indicate if rain is due in the mountains and result in flash-flooding in the desert areas. The CHP updates their forecast every six hours, so you know what you'll hear is as current as possible. Patrols in other states offer similar service.
- One thing that many travelers overlook is the condition of their windshield wipers and washers. It's been very dry this summer in most of our country, and people forget to check blade condition and washer levels. Getting caught on a freeway in a storm with bad blades isn't my idea of a fun thing. Just replacing the rubber blade assembly isn't very expensive when you consider the results of *not* doing it.
- Another thing to remember when traveling through dry areas is that those water barrels that are usually found halfway up steep hills may be dry. If you've got a long grade in front of you, check your water supply *before* you try the hill.
- Also remember that dry conditions make it imperative that you carefully consider where you park. Pulling off the road to get a good look at that cactus, or that historical marker, can put you in an ungraded, or grassed, area. Although catalytic converter-equipped cars that aren't running right are the prime offenders, conventional exhaust systems can easily start a fire in long grass, too.
- If you know you will be traveling in desert areas, you may want to consider buying auxiliary oil pressure, water temperature, and battery condition (amp) gauges. Indicator lights, if they're not burned out, tell you about engine malfunctions, but the problem is they only tell you about them *as they happen* . . . not before they happen. Gauges give you trend information. You can *see* that your water temperature is getting too high, or that your oil pressure is going too low. You can get assistance before you strand yourself or ruin an engine.
- One last thing . . . if you're going to a lake or to the ocean and you're taking along a raft or rubber boat that is inflated by a gas cylinder, *be sure* to carry it or secure it where the kids can't get at the inflation lanyard! Last week, I covered an accident where an entire family was seriously hurt when an inflatable raft deployed *inside* the car. Airbags may be a fine idea, but only when they come out of the dash . . . not when they come from the back seat.

As we pulled back into the CHP parking lot at the end of the patrol, Officer Savage asked if we'd like to look in the trunk of the patrol car. We admitted that the idea hadn't occurred to us, but that if he was so intent on showing us the trunk, we'd humor him and take a peek.

Along with emergency water supplies and radio equipment, there were two LARGE cartons. "Those cartons contain flares," said Officer Savage, "lots of flares. It's unfortunate that we need them . . . I'd like to see the accident rate down to where we only needed to carry one *small* box. Please ask your readers to have a good, safe vacation trip so I won't have to use a single flare."

We heartily agreed.

(above)
Officer Savage checks his supply of flares. Unfortunately, he may use this many flares on a typical weekend shift. He wishes the accident rate would allow him to carry just a few flares.

(left)
The national speed limit is 55 miles per hour. Rushing through a vacation trip will either get you a ticket or an accident. We like Florida's message to travelers . . . Drive 55—Arrive Alive.

CHEAP THRILLS

Want to learn the basics of high-performance driving and still stay within your budget?

We have always acknowledged the fact that some of our readers like to drive with a certain amount of, shall we say, *vigor*. This, in itself, isn't a bad thing, as long as it's done at the proper time and in the proper place.

OK, so you wanna be a racer; or maybe you've just been stationed in a new place where there are mountain roads with curves. Whatever the reason, you now want to improve your high-performance driving skills. The question is, "Where can I do it?"

Well, you can go to one of the professional schools like the Jim Russell or Bob Bondurant schools, but, frankly, those both cost an arm and a leg and many of us just don't have that kind of money. Another way is to buy yourself a race car and go race. That method has a few negative aspects too; like paying for a race car, and the possibility of getting creamed while you're trying to learn how to drive it.

There is a third possibility, though, for those of us who want to better our driving skills without strapping ourselves financially or physically.

Go-Karts Grow Up: About four years ago, a new wrinkle was added to the recreation spectrum by a group of enterprising people in Southern California.

Not content with go-kart tracks of the time, they went out and built themselves a few well-designed asphalt tracks, and populated them with a grown-up version of the go-kart. This new version usually had a full fiberglass body, seat belts, good brakes, and enough engine to put the speeds into the 25 to 30 mph range . . . a far cry from the rental go-karts then available.

The idea spread like hot cakes. Overnight, tracks bloomed all over the place, and then folded just as quickly. The general public became so sophisticated so quickly that the second generation tracks were outmoded almost as fast as they had come into favor.

The third generation tracks and cars have enjoyed a good deal of success over the last couple of years, but, even as they grew and prospered, they were being outmoded by a fourth generation operation, and, as we write this, the fifth generation is in the developmental stages.

These new fourth- and fifth-generation cars and tracks bear very little resemblance to the rent-a-go-kart of the sixties and early seventies. They are quite fast, handle as well as the most expensive race cars, and are far safer than their older cousins.

Don't get us wrong. We know that private go-kart drivers have tweaked and tuned their mounts to a fine edge in the last few years. We also know that a competitive go-kart in today's market can cost multi-bucks. What we're going to tell you about is a way to get all the thrills of top-drawer competition in a safe, sane, and relatively inexpensive manner.

Do you know of anyone who has a $10,000 race car and would be willing to let you, a rank amateur, drive it at the speeds it was made to be driven? Well, Indy Raceways will.

Indy Raceways of Colton, California will let you take one of their rotary-powered, independent suspension-equipped, tube-framed, full-bodied cars around the .5-mile concrete course for a dollar a lap. They will instruct you in the basics of high-performance driving, provide you with a computer-accurate readout of your lap times, and, if

continued

Karen Dingus, assistant manager, checks the Moores in and hands them the various releases, forms, rulebooks, etc., that are required by Indy Raceways. Procedure differs quite a bit from the time when you used to rent a go-kart by putting your money on the table!

New patrons get a thorough briefing on the cars they'll be driving, some tips on high-performance driving technique, and a pair of crossed fingers from the manager.

(right)
As a special favor, shop chief Pat McFall gives the Moores a rundown on the mechanical components of the cars.

you're good enough, they may even let you drive one of their Lolas (about $100,000 for the original car) for a few hot laps.

Not Hardly Go-Karts: As we mentioned before, these cars aren't exactly go-karts. They are small competition automobiles capable of safely doing about 140 scale miles per hour. This translates to about 55 to 60 mph on their tracks. If that doesn't sound too fast, consider you'll be doing it about two inches above the ground, and that the cornering forces the cars attain are quite sufficient to make your neck and wrists a little sore the first few times out.

The cars currently available were all designed and built by Don Edmunds, famous Indianapolis-car designer, and constructor of three Indy champion cars. The cars are built on a 70″ wheelbase and have a 45″ track. They weigh about 600 pounds and are powered by a Sachs rotary engine that develops about 28 horsepower. Power transmission is via the same method as a snowmobile, with variable-ratio pulleys providing the same results as a gearbox but with increased reliability.

The chassis is really a work of art. It is essentially a scaled-down Indy car complete with four-wheel brakes, adjustable suspension height, full belly pan, and Dana automotive-type rear axle mounted on an articulated subframe.

The cars have closed cockpits with race-type lap belts and padding everywhere. The bodies are fiberglass and weigh very little, which helps to keep the center of gravity down where it belongs . . . near the ground!

Fifth Generation: Indy Raceways is also offering, to customers with the most consistent lap times, a ride in their fabulous new Lola T506. The T506 is a Formula 5000 car, designed and built by the Lola staff in England, and scaled down slightly to meet the dimensions of .5 mile closed-course racing.

The Lola features fully-independent suspension front and rear, rack and pinion steering, and brakes that really work. The suspension is completely adjustable, just like Lola's Grand Prix

Cheryl dons her helmet (thoughtfully provided by the management) and gets her "preflight" briefing from Larry Vizard, Chief Pit Steward.

The number and sequence of the cars on the course are controlled by a computer-operated stop light at the start line. System insures cars won't come in conflict with each other.

cars. The space-frame chassis is fully triangulated for rigidity and incorporates a built-in roll bar for safety.

The Lola handles so well its lap times run about three seconds faster, per lap, than the standard cars!

If we haven't made it clear yet, these cars are not glorified go-karts . . . they are small racing cars. They handle well, stop quickly, and will give you excellent training in the basics of high-performance driving.

The Acid Test: We were most impressed with the cars from the engineering and safety standpoints, with the track and support facilities, and with the staff of Indy Raceways. But, we reasoned, all our research and suppositions weren't really worth a hoot unless the people who actually drove the cars were satisfied. So, out went the call . . . "Needed, two people who want to learn high-performance driving . . ." We picked two people who responded, explained what we wanted to know, and turned them loose at the entrance to Indy Raceways. What follows is the essence of the conversation we had when they returned from the track.

Our Guinea Pigs: The people we selected for this test are an active-duty Air Force husband and wife team, Kenny and Cheryl Moore. Both stationed at Norton, Sgt Kenny Moore is a recruiter, and A1C Cheryl Moore works in TMO's Authorization and Allowances section. Both are interested in improving their driving skills, but for different reasons. Their family car is a Triumph TR6, and Kenny has past experience with go-karting.

DRIVER: Well, how was it?

Kenny: A lot different than we thought it would be! I still remember renting go-karts at tiny dirt tracks . . . just go up to the man, give him your money, and drive around 'til you got bored. This is a whole new ballgame. We walked in, and instead of pointing us to the track, they pointed us to a huge board stating the rules of the track. Those guys are *serious!*

Cheryl: I felt a little better about the whole thing, knowing it was professionally run and there wasn't much chance of getting hurt. I was surprised to see that the cars run one at a time and not all together like in a race. I like that. It gives me a chance to see what the car will do without worrying about someone hitting me or vice versa. I like the idea of going against the clock instead of racing wheel to wheel.

Kenny: I don't know about that . . . I think I'd rather go wheel to wheel . . . competition, to me, just doesn't seem the same unless you race against someone.

DRIVER: We can understand that, but what we're asking is "Do you think this is a good place to learn to handle a car in a high-performance situation?"

Cheryl: Yeh, on that basis, I think it's super. I never knew that a car would go around a corner so fast. I actually had to hold my head at a tilt to keep it from being pulled over to the outside of the corners . . . and my wrists . . . they're really sore. I never imagined a car would take so much force to hold it in a sharp turn . . . now I know how hard power steering must work.

Kenny: If you look at it from a training standpoint, I give it a 95 . . . you bet it's good training. I learned what little I know of cornering techniques by taking the TR6 out and thrashing it around an empty parking lot. That

continued

AND THEY'RE OFF . . . first corner speeds are already sufficient to make driver tilt his head to the inside of the turn.

Halfway through the .5-mile course, speeds reach 35 to 40 mph. First time drivers begin to notice how important car handling and basic driving skills are.

was hard on the car, and I really didn't learn much about understeer, oversteer, or tire adhesion limits. Just five laps with these cars and already I feel more confident about my car and its cornering ability.

Cheryl: I *still* don't know exactly what understeer and oversteer are, but I know how they feel! If you use too much power, the car seems to "push" out . . . it feels like the front wheels lose traction and won't turn the car. If you don't use enough power, the front end will turn the car real sharply and you'll cut the corner short . . . is that under- and over-steer?

DRIVER: That's right. Did you learn anything else?

Kenny: With these cars, everything is *intensified*. I don't really think I *learned* anything, but I experienced things I've never felt before. For instance, I know you have to "set" a car up for a corner, you know, get it ready for the corner. With these cars I found out what that really means! If you don't set the car up right, you can't cut a good corner. Braking at just the right time, before the corner and not in it, is another thing I discovered. Like I say, I knew of all these things, but never experienced them before. I had always assumed my TR6 would do this stuff, but now I know it won't. I've been near the limits of adhesion in the TR but I never knew it! Until now.

Cheryl: When I was just beginning to drive, I had complete faith in my car . . . I didn't know it could let me down in a corner. Now, I know it *can* . . . but now I also know I can do something about it. I can *drive* it out of a bad situation and not just ride along as a passenger. Another thing . . . like I said before, I really appreciate being able to learn these tricks at my own speed. I don't think I would have learned anything if I had to worry about other people on the track. With this set-up, I can concentrate on my driving and really learn it. Then, when I get into a tricky situation on the street, I'll be able to handle it by reflex, you know, really quickly.

Kenny: The more I think about it, the better I like the idea of running against a clock. I know that the best racers are the most consistent racers. By getting a computer printout of each lap, I can see, in writing, how consistently I do the track. I imagine the really fast times will come with practice, but I think it'd be hard to be fast without being consistent. When I get consistently fast, *then* I'll think about going wheel to wheel in a race. I'm beginning to see where this type of training is really the hot set-up for basic high-performance driving. (ED NOTE: Kenny isn't the only one . . . The California Highway Patrol is using these tracks for refresher training because it is so inexpensive, yet so real.)

DRIVER: Overall, what are your reactions?

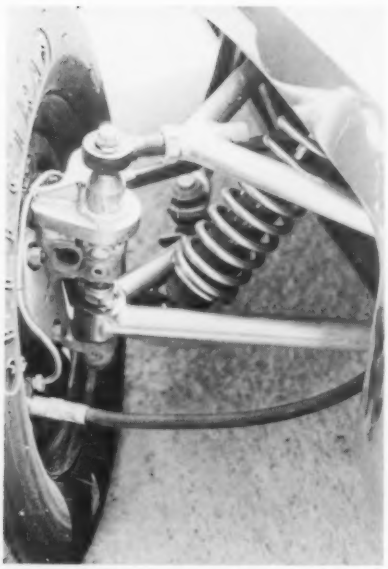
Cheryl: I loved it! I'm gonna get Kenny to bring me out here again soon. I get all the thrills of racing without any of the risks and with only a fraction of the expense.

Kenny: I really enjoyed it. These cars are so far removed from the old go-karts I used to drive that there's no comparison. If I had the money to go back into racing, I'd sure spend some of it here as basic training. It'd be a whole lot cheaper than stuffing my race car into the first turn because I didn't know the basics. Oh, one other thing . . . it's a gas! We'll definitely be back!

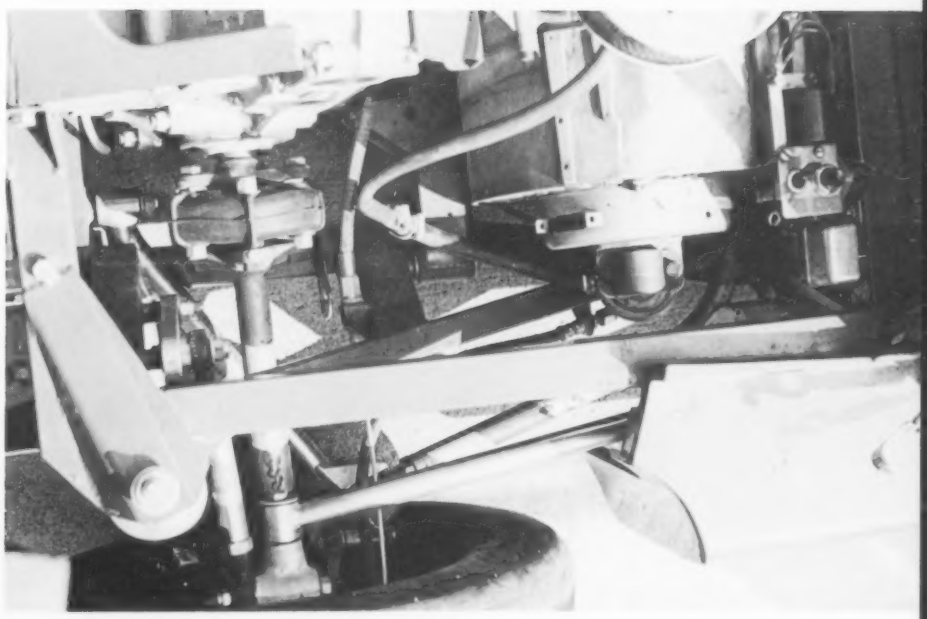
Cheap Thrills? Compared to other forms of automotive competition, these raceways definitely qualify as "cheap thrills." But there's more to it than that. What you have here is a safe, relatively inexpensive method of improving your driving skills and at the same time have more cubic fun than you've had in a long time.

If there's a track in your area, try it. You'll like it, and you'll learn!

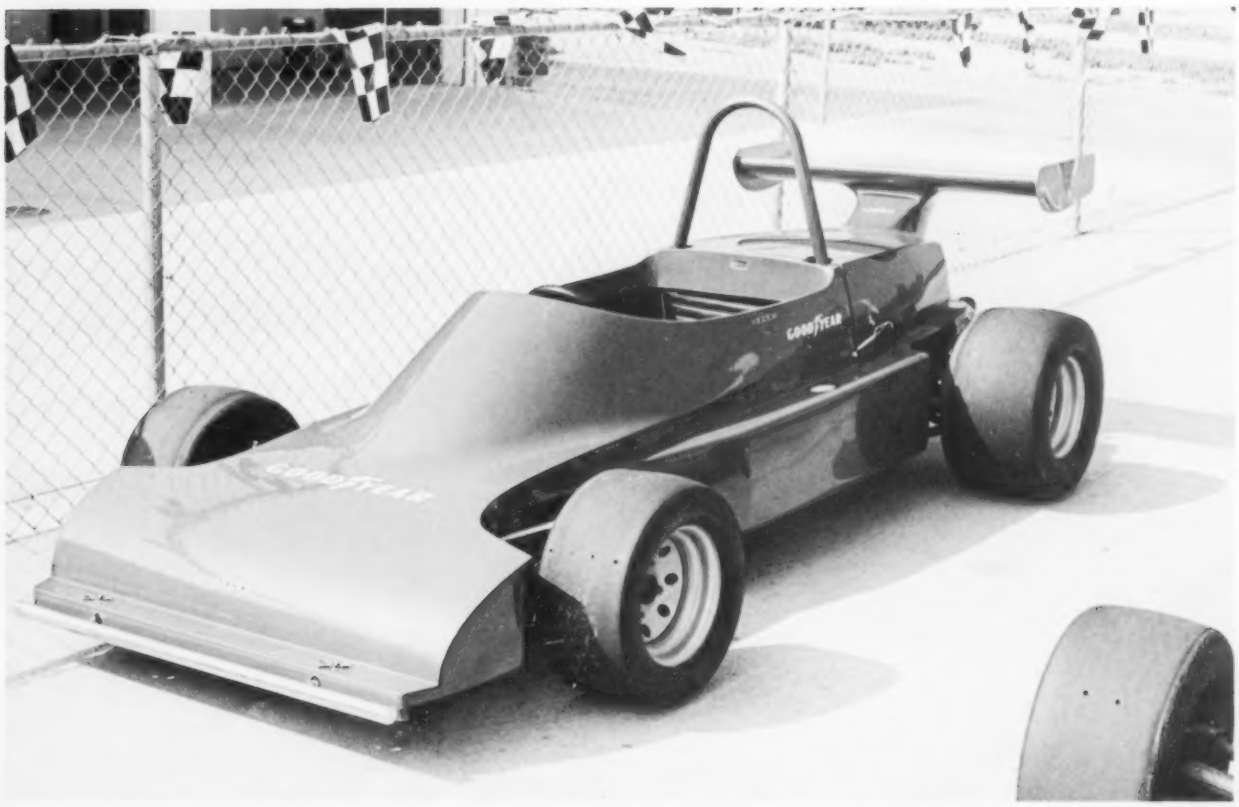
At finish line, drivers are handed a slip of paper with lap time on it. Computer-controlled timing system is extremely accurate, reading to 1/1000th of a second.



After the Moores had left, our photographer wandered through the shops and took the following pix that illustrate that the Indy Raceways' cars are pretty far removed from go-karts. Fully independent and adjustable front and rear suspension systems are same as on full-size race cars.



Overhead shot of Lola T506 rear end shows independent suspension components like leading-arm struts and doughnut joint for half-shaft that drives the wheel. Brakes are dual leading shoe on front, and single trailing and leading in rear. These fifth-generation "go-karts" are just too much!



Lola T506, built exclusively for Indy Raceways, is scaled-down Formula 5000 race car. Tube frame is completely triangulated for rigidity and safety, and roll bar is integral with chassis. This particular prototype cost over $100,000, but, if you're good enough, you can get to drive it.

CONSIDER THE RISKS

Once in a while, someone asks DRIVER a question: How come you glamorize motorcycle riding instead of pointing out that it can also be very dangerous – far more dangerous than driving?

If you're a regular reader, you know that everything we publish about motorcycles – street riding, off-road, enduros, racing, whatever – has the same basic theme. *Get proper training. Wear protective equipment. Maintain your physical conditioning. Be smart because smart riders survive.* Nevertheless, we admit that we may seem to glamorize motorcycling without trying to.

No reasonable person – certainly no one on the staff of this magazine – would argue with the statistics which prove that the average human being is more likely to be killed or injured riding a cycle than driving a car. This is especially true for the young age group

for whom DRIVER is published.

In some Air Force Commands, 40% of the disabling injuries from private vehicle accidents involve motorcycles. Yet we all know that nowhere near 40% of the registered private vehicles in that command are motorcycles. At one Air Force Base last year, more than half the disabling injuries from traffic accidents involved motorcycles. Do half the people on base ride cycles? No way.

If right now you're trying to decide whether to buy a car or a motorcycle, you should take this high-risk factor into consideration. If you decide the advantages of a motorcycle outweigh the disadvantages, then promise yourself you will buy and wear protective equipment. Every time you put on your helmet, remember you're not wearing it because the state law or a military regulation requires it, or because your commander says so. You're wearing it because you owe it to yourself.

Medical doctors – especially surgeons – have strong opinions about helmets. Here's a quote from Dr. Ernest A. Austen, Chief of Surgery and Traumotology at a Maryland hospital:

"During recent years we have experienced an ever-increasing number of admissions to our Institute because of severe multiple trauma due to motorcycle accidents. *(Trauma is the word for wounds to living tissue caused by an outside agent . . . Ed.)* Identification of those patients who were not wearing helmets at the time of the accident is readily determined by the types of injuries sustained. Individuals not wearing helmets invariably end up as organ donors, when the family gives permission, because of the severe and irreversible brain damage which leads to brain death. In sharp contrast, the major injuries sustained by those patients who were wearing helmets are primarily lower extremity trauma. Although frequently severe, such injuries certainly are compatible with a functional life . . .

"I've been informed that the claim (false) has been made that the wearing of helmets increases the incidence of neck injuries. This couldn't be further from the truth. In our own experience, less than one per cent of the motorcyclists admitted to our unit have had neck injuries, none of which were severe."

Next month DRIVER is bringing you a story about racing motorcycles on ice as it was done last winter by the Fort Devens (Mass.) Riders. In Europe ice racing on motorcycles is a popular sport, but extremely dangerous. At Fort Devens, the word was *safety first*. Nobody was hurt, everybody had a ball. If you're going to try it, we want you to know how to do it – SAFELY.

IN THE DRIVER'S SEAT

Gil Baumgartner

Gil Baumgartner is a slow-walkin', slow-talkin', good ol' boy from Ashville, North Carolina. When you meet him, your first impression is that he'd be right at home talking about Cale Yarborough, NASCAR, grits, and other things that traditionally stereotype a "redneck."

Well, we've never believed in stereotypes, and our interview with Gil reaffirmed our opinion that you don't have to be from one area of the country, or have a certain rank, or talk a certain way, to be interested in classic automobiles.

Of course, when we say that Gil is "interested" in classic Thunderbirds, we are making the biggest understatement of the year! When he's at a T-Bird meet, Gil eats, sleeps, and breathes T-Birds, and we suspect he's not that much different at home!

We met Gil at the *Early Birds of Southern California* car club meet in Long Beach and interviewed him as he was polishing (again!) his beautiful '57 T-Bird.

Gil, a 21-year man with the Air Force, began his hobby of restoring cars when he purchased and restored a '47 Ford. He bought his present car in May of '71 from the original owner, drove it on the street for about four years, and then began the restoration. Gil knew he had to have *this* car, because

continued

When Gil gets ready for a show, he doesn't fool around. Would you believe he carries (and uses) a toothbrush to clean any little nooks and crannies where dirt could accumulate? This man is *serious* about having his car perfect.

CMSgt Gil Baumgartner is the Tech Advisor to the DCM of 307th Air Refueling Group at Travis AFB, California. Gil is also slightly enthusiastic about classic Thunderbirds. His '57 T-Bird is one of the finest examples in the nation.

'55, '56, and '57 Thunderbirds make this man's eyes glisten

Gil goes through the "clean and polish" routine at a meeting of the Classic T-Bird Club International. These meetings will leave you with your tongue hanging out if you're a T-Bird fancier. Address of CTCI is 9929 Jefferson Blvd., Culver City, California if you want to know more about these classic cars.

Each car at a CTCI meet must pass a safety and operability inspection before it can be judged. Inspectors check mechanical condition and insure that all lights, brakes, etc., are up to snuff. Gil used his base hobby shop for a lot of the mechanical work involved in the restoration.

Gil gives the ol' evil eye to an intermittent radio. It cost him half a point, but he still took first place in his division.

Even the lights for the instruments must work. Here, members of the inspection team darken the cockpit so dash and radio lights can be checked.

it was manufactured on October 9th, 1956, the same day Gil enlisted in the Air Force!

The actual restoration took about six months and meant working on the car every weekend. It was worth the time and effort though, because Gil figures the car is worth over $15,000, and it's brought him quite a few trophies.

The car was disassembled down to every last nut and bolt, and was reassembled only after every part had been inspected. Everything that needed (or even looked like it might eventually need) replacement was changed, right down to the serviceable bushings in the front end.

Gil rates the car as safer and better than new. Silicone brake fluid and a fire extinguisher have been added to the safety items that were standard on the car. The T-Birds were originally manufactured with padded dashes, dished steering wheels, pop-out windshields, and seat belts . . . all this when safety wasn't a really big consideration for car manufacturers!

Gil considers the car as a "99 pointer"; in other words, it's capable of gathering 99 out of a possible 100 points that are awarded at a classic T-Bird club gathering. We asked him if he had ever gotten 100 points and he told us that, one time, he thought he had a 100 pointer going, but lost one point because the headlights were each made by a different manufacturer!

If you're ever in the area of Travis Air Force Base, check in with Gil at the 307th Air Refueling Group and ask to see his T-Bird . . . you'll be glad you did.

This trunk area isn't stock, but it shows to what lengths some owners will go to make their T-Bird "the best."

Hobby Shop Price About $8.95
Downtown Price About $16.95
Is your labor worth $8 per hour?

BACK TO BASICS...

Anyone who's ever been in the military has probably heard the term "preventive maintenance." It doesn't matter whether you're a dental technician, an aircraft crew chief, or a vehicle control officer, preventive maintenance is a concept you hear about and work with continually. The Army even has a monthly 64-page magazine called *PS, The Preventive Maintenance Monthly*. Why all the emphasis on PM? Because, over and over again, it has been proved that it works!

Preventive maintenance, in the form of a grease job and an oil-and-oil-filter change, is probably the best way to prolong the life of your vehicle's power plant and help insure that the engine won't go out to lunch when you need it most.

Why Change? Oil, like most other things, eventually wears out. The addition of aftermarket oil supplements may replenish some of the original chemical components, but they won't remove the accumulated acid, ash, moisture, or other contaminants that build up in motor oil over a period of time.

The oil filter can remove only so much of the accumulated junk before it, too, fails to function properly.

Why "change" chassis lubricants like you do oil? For the same reasons . . . grease "wears out" eventually, and becomes contaminated with foreign matter just the same as oil.

Since both chassis and engine parts are made up almost entirely of metal, they are subject to failure caused by contaminants in the lubrication. Abrasion, or the wearing away of the metal itself, is one problem. Another is the formation of deposits of foreign matter caused by the inability of dirty lubricant to keep surfaces clean. A third problem is the failure of metal caused by the attack of acids formed by combustion or chemical reaction . . . acids that can be defeated only by removing the contaminated lubricant.

How often? One thing is certain – you won't hurt your engine by changing the oil too often. We at DRIVER feel that frequent changes of oil *and* filter are the keys to long engine life. With the exception of new cars using a reputable synthetic such as Mobil 1, we feel that 5000 miles is the longest your car should go without a change. In dusty areas of the country, 3000 is about the outside limit. And while you're at it, don't forget to check and change, if necessary, the fuel and air filters, too. Power brake systems often have an air filter, and automatic transmissions have a fluid filter . . . check 'em when you do your PM,

THE BACKYARD MECHANIC

Grease, Oil, and Filter

change 'em as needed, and we think you'll find that the cars of today will go an awfully long time before major maintenance is needed.

Quality: All oil cans are supposed to be labeled with a code which indicates the oil's service limitations. For pre-'71 cars, use oil graded at least SD (Service Deluxe). Newer cars require SE (Service Extreme) quality. Most premium-quality oil will provide adequate engine protection, so the choice of brands is personal preference. If you *do* decide, for some reason, to switch brands, be sure that you continue to use the same type (detergent or non-detergent) and rating (SE or SD) that you have been using.

Most good quality oil filters are about the same . . . but be sure that, whatever brand or type you choose, it meets the car manufacturer's specifications and warranty requirements. Lately, we've seen the development of two-stage filters and filters with internal additive supplies. Both new types appear to be well-tested and reliable and seem to have gained acceptance with the professional racer crowd. These new-type filters are not too much more expensive than conventional filters, and the added protection they offer may be worth the increase in price over single-stage conventional filters.

Additives: Basically, if you use a high-quality oil and change it regularly, you don't need additives. Army studies indicate that the vast majority of those additives tested by the Army don't add much to oil performance, and they also want to remind you there is the possibility of a voided warranty if such a product is in use when certain types of engine failure occur.

Get Going: We hope we've convinced you that a grease job and an oil and filter change are just what your car needs, so let's tag along with Belinda Jean Proietti of the DA section of AFISC as she trips on over to the Norton AFB Auto Hobby Shop.

"Lindy," a San Bernardino native, lists poetry, dancing and baseball as her hobbies, and tells us that she works on her own car most of the time . . . she watches her odometer carefully, so she'll know when a lube job and an oil-and-filter change are needed. This petite, attractive young woman proves you don't need to be male, or a professional mechanic, to take an interest in your car and its maintenance. Although we used our photographer's car for the pictures, we might add that Lindy's car is a VW with over 100,000 miles on it. She thinks that proves the value of preventive maintenance.

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the backyard mechanic

continued

1

Belinda Jean "Lindy" Proietti signs in at the Norton AFB Auto Hobby Shop . . . object: grease job, oil and filter.

2

Lindy is assigned a lift, and the tool crib manager gives her the tools necessary for the job . . . not a bad deal for 75 cents!

3

Like many of us, Lindy has a ring that has great sentimental value, and she doesn't want to remove it. A little duct tape eliminates the hazard, and her watch will come off before the car goes on the lift. If she was working around machinery, or if the engine was going to be running, she'd also pin her hair back and put on a scarf.

4

Most hobby shops have sales stores where you can buy your parts. Savings over downtown prices is usually considerable. Shop personnel can advise you on the correct grades of oil, too, if you're not quite sure what you need.

5

It helps to have a spotter when you put the car into the lift area . . . hobby shop employees will usually assist.

6

Before you put the lift arms under the car, check with a manual that shows the lift points. If you don't position the arms correctly, you can bend pieces or even crush a muffler or catalytic converter.

7

Instructions for operating the lift are usually placed near the controls. If it's your first time, or if you aren't sure about all the levers and valves, ask the hobby shop people to assist you.

8

Once the car is on the lift and the drain oil receptacle is in place, remove the oil drain plug from the oil pan. A word or two of caution: the oil will be *hot,* and so will the drain plug . . . you can burn fingertips easily. Also, note the direction in which the jaws of the crescent wrench are facing . . . if it's turned around, it may slip.

9

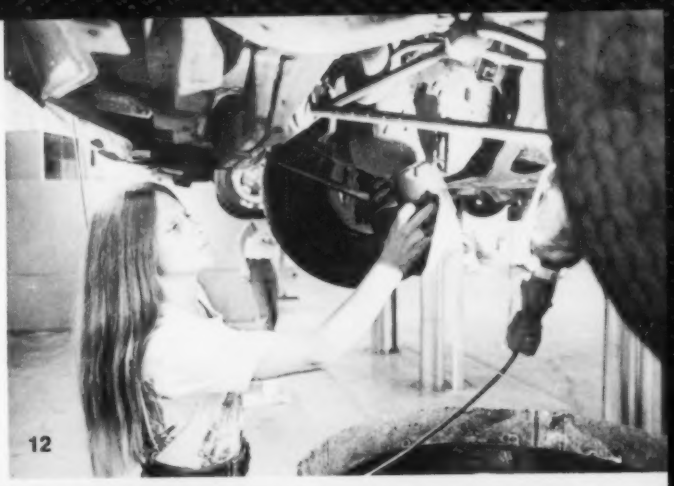
Looks like she's doing it right . . . Lindy's got plenty of light, the catch pan is in place, and she has a rag to hold onto the drain plug if it's too hot.

10

While the oil is draining from the pan, prepare to remove the oil filter. This gag photo shows how some people go overboard . . . yes, the filter will be tight, but that's why we use a filter wrench to remove it.

continued

11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20

the backyard mechanic

continued

11

The oil filter wrench usually takes the shape of a strap or chain that fits around the filter canister. There is only one way that is correct for filter wrench operation. If it slips, you know you have to turn it around.

12

After the filter is broken loose with the wrench, *carefully* remove the filter and let it down vertically. Again, the oil and filter will be hot, and spilled hot oil running down your arm is *not* fun. Use a rag, and plan ahead if you must get the filter out from above or behind obstructions.

13

As the oil continues to drain from the oil pan and filter mount, get the grease gun. Check the end to see that it's clear of dirt that can be forced into what you'll be greasing. Wipe the gun off with a rag so that it won't be so slippery. Try not to have your finger on the trigger as you inspect the end. Grease tastes lousy!

14

After studying your manual to determine where the grease fittings are, wipe the fittings clean, put the nozzle of the gun firmly over the fitting nipple and squeeze the trigger. If the car has plugs instead of fittings, go ahead and install fittings, but be sure to remove them and reinstall the plugs when the job is done.

15

This picture shows what happens if the nipple is clogged or if the gun is not held firmly enough against the fitting. Grease should seep out of the joint between the two components, not from around the gun nozzle. Resecure the gun to the fitting and try again. Fill fitting until grease just begins to ooze out. Ball joints and other fittings with neoprene or rubber reservoirs should be filled till they are firm, and no more. Too much grease can rupture the reservoir.

16

Reinstall the oil pan drain plug. Then, prior to installing the new oil filter, wipe down the filter mount on the engine block and apply a thin film of oil or grease to the seal on the filter canister.

17

New filter goes in the way the old one came out. Instructions say "hand-tighten," but to be sure it doesn't leak, you need hands like Goliath . . . better to use the filter wrench and tighten "snugly," but don't go overboard and wrinkle the filter canister.

18

Check to be sure you're installing the proper grade and weight of oil for your car's needs.

19

Install the amount of oil called for in your owner's manual. Don't forget to reinstall oil filler cap and PCV or smog connections, if applicable.

20

Check oil level, fire up the car and check for leaks from filter and drain plug, turn car off and recheck oil level. Clean up your work area, return the tools, make a note of the odometer reading, and pat yourself on the back for a job well-done and quite a few bucks saved.

Timely Topics

Change of Commanders

Major General Ranald T. Adams, Jr. has departed his position as Commander of the Air Force Inspection and Safety Center (AFISC) to become the Director of the Inter-American Defense College at Fort McNair, Virginia.

Major General Richard E. Merkling, the former Director of Aerospace Safety at AFISC, has moved into the command position.

Brigadier General Garry A. Willard, Jr. has arrived from Korea to become the Director of Aerospace Safety. We wish all three much success in their new assignments.

Drugs vs. Alcohol

A questionnaire answered by 1,538 high school pupils in Toronto suggests that use of tranquilizers and stimulants may be more hazardous to driving than is alcohol consumption. Among the 1,538 students, 710 were drivers. Of the latter, 15 per cent reported that they had had an accident in the past year and 20 per cent had driving violations. While 2.7 per cent of all the drivers admitted having an alcohol-related accident, 2.0 per cent said their accidents involved other drugs. Driving after drinking was far more common than driving after drug use. (Fifty-six per cent said they drove after drinking, while less than 6 per cent drove after drug use.) However, users of tranquilizers, stimulants, and LSD had more accidents than did the drinkers. The researchers concluded that when exposure levels are taken into account, use of drugs was more hazardous for drivers than drinking.

DOT Warns of Fan Blade Breakage

On 1970-1977 Ford Motor Co. Passenger Cars and Light Trucks

The government warns owners of 1970 through 1977 Ford Motor Co. passenger cars and light trucks that the blades on their engine cooling fans could break off, resulting in vehicle damage and possible personal injury.

The warning comes from the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA), which has opened a formal defect investigation (Case C7-24) into the matter.

Joan Claybrook, NHTSA Administrator, said that "if such breakage occurs while the vehicle is in motion, vehicle damage such as dented hoods and severed hoses could result. The danger, however, is greatest for service personnel and vehicle owners who perform their own maintenance, since blade breakage while the hood is open and the engine is running, can result in serious injuries to persons working on the engine or standing nearby."

Involved in this investigation are those Ford, Mercury, and Lincoln passenger cars and Ford light trucks that are equipped with "flex-fans."

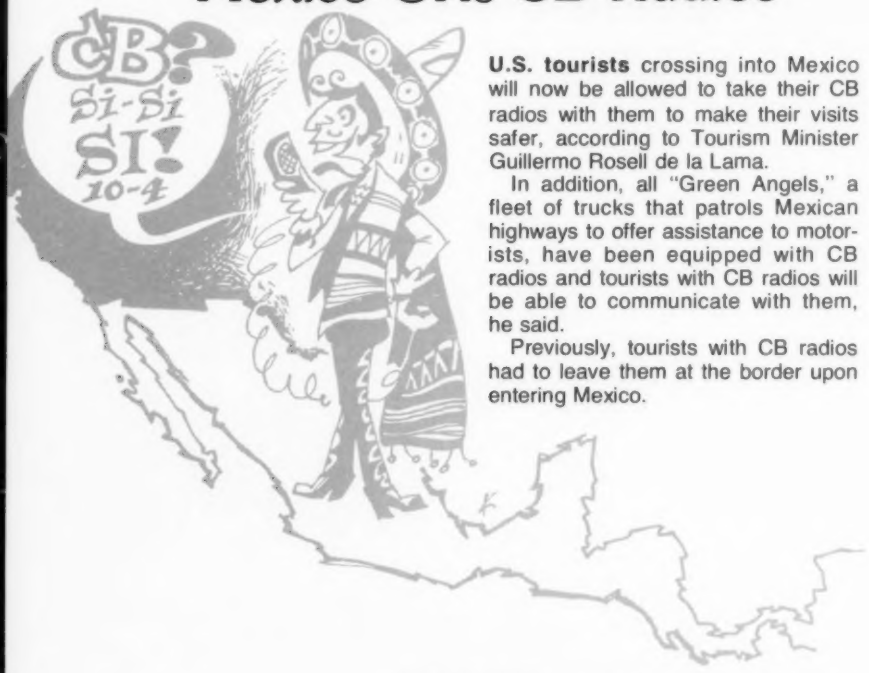
These flex-fans consist of five or seven curved, flexible blades. As fan rotating speed increases with an increase in engine operating speed, the blades flex backward or flatten out. This reduction in fan blade pitch results in less engine horsepower consumption from operation, and results in noise reduction as well. Apparently, the constant flexing of the blades over a period of time, coupled with other factors, results in metal fatigue which causes the fan blades to crack and break off. Because the fan rotates at high speeds, the broken pieces can be propelled with great velocity. While there are no known reliable pre-failure symptoms, those aware of this potential problem may, through careful examination of their fans, detect the beginning of cracks before blade breakage results. Should a crack be detected, the vehicle should be taken to the dealer immediately for repair.

The NHTSA administrator suggested that persons working on such vehicles check for the presence of cracks in the fan blade before starting the engine. She also said "if you must work on the engine with the engine running, remember that a broken fan blade can be propelled straight up, down, or to either side of the rotating fan, so keep all parts of your body away from such areas."

Ford Motor Company has agreed to recall approximately 400,000 vehicles. Beginning June 22, Ford will notify owners of the affected vehicles by mail as required by the statute, and at the same time will supply parts to dealers to replace the defective fans. The NHTSA safety defect investigation will continue to determine if vehicles of other models or other model years should be recalled as well.

All owners of these vehicles who have experienced this problem are requested to report the details, in writing, to the Office of Defects Investigation, National Highway Traffic Safety Administration, 400 Seventh St., SW, Washington, DC 20590. The problem may also be reported to the NHTSA Auto Safety Hotline by calling, toll-free, (800) 424-9393 (for Washington, DC residents the number is 426-0123).

Mexico OKs CB Radios



U.S. tourists crossing into Mexico will now be allowed to take their CB radios with them to make their visits safer, according to Tourism Minister Guillermo Rosell de la Lama.

In addition, all "Green Angels," a fleet of trucks that patrols Mexican highways to offer assistance to motorists, have been equipped with CB radios and tourists with CB radios will be able to communicate with them, he said.

Previously, tourists with CB radios had to leave them at the border upon entering Mexico.

Tamper-Proof Carbs Coming

The State of California has ruled that beginning in 1980, all new cars sold in that state must be equipped with tamper-proof carburetors. The Air Resources Board said manufacturers must provide idle-fuel mixture adjustments that cannot be altered without partial disassembly of the carburetor. Some idle-fuel mixture adjustments will be allowed, however, provided the fuel-air mix cannot be altered so the car will not meet state emission standards (highest in the U.S.).

A board spokesman said recent tests of 85 1975- and '76-model cars indicated 25% had been deliberately tampered with (in order to circumvent smog control requirements).

DOT is Investigating

1974 Porsche 914 and 1971-77 Mercury Capri Vehicles

Two new Federal investigations of alleged safety defects involving 1974 Porsche model 914 vehicles and 1971-77 Mercury Capri vehicles have been announced by the U.S. Department of Transportation's National Highway Traffic Safety Administration.

The Porsche investigation involves the possibility of engine compartment fires in 1974 Porsche model 914 vehicles manufactured by Volkswagen A.G. The investigation is based on 17 owner complaints alleging the occurrence, without warning, of fuel-fed engine compartment fires. Thus far, no injuries have been reported.

This investigation involves an estimated 16,000 vehicles which are equipped with an electronic fuel injector system that sprays fuel, under high pressure, into the flow of air entering the engine's combustion chamber. Owner complaints allege that fuel leaks from the pressurized fuel supply system allow fuel and vapors to collect in the engine compartment. Ignition of the fumes is reportedly caused by high voltage ignition wire leakage or by engine backfire through the air cleaner.

NHTSA Administrator Joan Claybrook said: "We urge owners of 1974 Porsche 914 vehicles to be alert to any strong odor of gasoline in the passenger compartment or fuel stains on the surface under parked vehicles. If such symptoms are present, vehicle owners should contact their dealers immediately."

The Mercury Capri investigation involves alleged front stabilizer bar failures on 1971-74 and 1976-77 Mercury Capri vehicles which are manufactured in Germany for the Ford Motor Company. There was no 1975 model of this vehicle. The investigation involves 452,870 vehicles produced during the 1971-76 model years; since the 1977 model has just been introduced, no production figures are yet available on this model.

The NHTSA requests all owners of these vehicles who have experienced any of these problems to report the details of their experiences, in writing, to the Office of Defects Investigation, National Highway Traffic Safety Administration, 400 Seventh St., SW, Washington, DC 20590. Motorists may also report these problems to the NHTSA Auto Safety Hotline by calling toll-free (800) 424-9393 (for Washington, DC residents the number is 426-0123).

continued

Quoted Without Comment

The following is excerpted from "A Reporter At Large: Tomatoes," by Thomas Whiteside, Jan 24, 1977 New Yorker.

" . . . Pondering recently on the toughness of the MH-1, the tomato bred for the age of mechanical picking, and on how a particular MH-1 had remained intact after a six-foot fall to a hard tiled floor in Dr. Volin's office, I began to wonder whether America was making automobiles that would stand up as stolidly to that kind of impact. Out of curiosity, I telephoned Dr. William Haddon, Jr., an auto-safety expert, who is president of the Insurance Institute for Highway Safety, and asked him if one of his technical people could compute the approximate impact speed of the Florida MH-1 in the six-foot fall I had witnessed in ratio to the minimum federal requirements for impact resistance in the bumpers of cars sold in this country. Dr. Haddon obliged, and on the basis of the figures he provided I concluded that Dr. Bryan's MH-1 was able to survive its fall to the floor at an impact speed of 13.4 miles per hour, more than two and a half times the speed which federal auto-bumper safety standards provide for the minimum safety of current-model cars. This undoubtedly represents a great step forward in tomato safety. . . ."

(Insurance Institute for Highway Safety Status Report, 31 May 1977)

GM, Ford and VW Vehicles
Under New Defect Investigations

Three new Federal investigations of alleged safety defects involving GM, Ford, and VW vehicles have been announced by the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA).

For several months, NHTSA has been conducting an inquiry (Case C7-21) involving the power brake booster on 2.2 million '76 GM vehicles. These include certain Chevrolets, Pontiacs, Oldsmobiles, Buicks, Cadillacs, and GMC trucks. The problem involves failure of the power brake booster, and is the result of gasoline vapor condensing in the booster can. This accumulation of liquid gasoline vapor condensing in the booster can causes the booster diaphragm to deteriorate and rupture, with a consequent loss of power brake assist and the necessity for the driver to use abnormally high brake pedal forces to stop the vehicle.

The NHTSA advises owners of '76 GM vehicles who experience partial or total loss of power brake assist to take their vehicles to their dealer for inspection and correction.

The Ford-related investigation (Case C7-13) was opened in response to two reports of noncollision accidents and one low-speed collision accident in which it was alleged that the plastic instrument panels on the subject vehicles shattered, leaving sharp edges which could lacerate and puncture vehicle occupants. In two cases, lacerations were alleged to have occurred to either the occupant's arm or face. The vehicles involved include an estimated 192,053 1975-77 Ford Econoline and Club Wagons without instrument panel padding.

NHTSA's investigation of various VW models, all equipped with similar throttle control systems, is based on owner complaints that design weakness of the system leads to broken throttle cables, with less control over the vehicle's speed.

The VW investigation (Case C7-14) involves an estimated 370,200 vehicles of the following models: 1975-76 Rabbit and Scirocco; 1974-75 Dasher; 1973-74-75 Audi; 1975 Type I sedans (Beetle); and 1976 Type II vehicles (Vans).

NHTSA reminded all owners of the affected GM, Ford, and VW vehicles that all these problems represent a threat to their safety. The agency requests all owners of these vehicles who have experienced any of these problems to report the details of their experiences, in writing, to the Office of Defects Investigation, National Highway Traffic Safety Administration, 400 Seventh St., SW, Washington, DC 20590. Motorists may also report these problems to the NHTSA Auto Safety Hotline by calling toll-free, 800-424-9393 (for Washington, DC residents, the number is 426-0123).

"It's Only Beer"

Sure. Just like it's only bourbon, or vodka, or scotch. One beer or one glass of wine is about equal to one average mixed drink. You'll get just as drunk on beer or wine as on hard liquor.

Our number one drug problem is alcohol abuse. About 300,000 Americans are addicted to heroin. About 9,000,000 are addicted to alcohol. It's not even close.

double clutch

continued from page 2

becomes progressively less important as the dimming light drains the color from everything.

Of the commonly available car colors, white ranked highest in all-around visibility. An exception is in the "bright overload" situations of completely snow-covered roads or sunstruck white sands. If you drive in areas where these conditions frequently exist, you will be safer with bright yellow or bright orange, which rank number two and number three in visibility.

If you assume brown and black rank lowest, you're almost right. Actually, very lowest on the visibility scale is dark green.

All of this set us to thinking. Have you noticed that the new fire engines aren't red anymore? That's right. They're white and lime lemon. Looks like those German engineers have something. Alice is thinking it over.

LETTERS TO BACKFIRE THE EDITOR

MOTORCYCLING IN JAPAN

In reading your article entitled "Classroom on Wheels" (May '77 DRIVER), I noticed some errors.

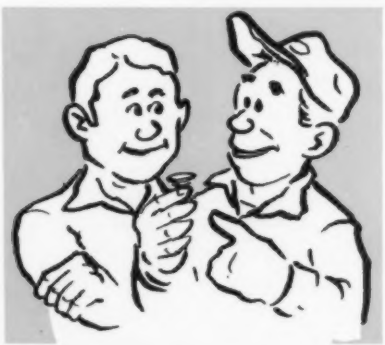
Being a veteran bike rider in Japan, and am now currently riding in Japan, the captions under the pictures on page 16 caught my eye.

IAW the Japanese Road Law, a motorcycle 250cc and above is classified as a Class One vehicle. A Class One vehicle is entitled to a full lane. This is clarified in the text, and also brings up another interesting point—two Class One vehicles cannot occupy the same space in a lane at the same time. Therefore, it is not legal to pass on the left, or to lane-split. However, the Japanese police will not stop a biker passing on the left. But if an accident results, the biker is automatically at fault.

This fact is not taught in any traffic school in the Japan area. The Roadmaster's Motorcycle Club, Yokosuka, is currently trying to have this point brought up in the Yokasuka Naval Base Safety Program.

Many thanks to your mag for its many fine articles on bikes and other subjects. SSgt Grinsel has the right idea. Keep up the good work.

OS2 Douglas Houston, USN
USS Lockwood (FF-1064)
FPO San Francisco 96601



"ARE YOU AS SMART AS YOUR MECHANIC"

In your May '77 DRIVER article "Are You As Smart As Your Mechanic," (prepared by the Car Care Council) page 28, question 10, the answer given as 10B is suspect as not being valid.

The question was: "What is the purpose of the master cylinder check valve(s) on cars equipped with drum brakes?" Your answer: "To prevent air from entering the hydraulic system." This is incorrect. Air cannot enter a serviceable airtight brake system under any condition; the absence of the check valve notwithstanding.

The purpose of the check valve is to reduce velocity of fluid returning to the master cylinder and to impose a low pressure, approximately 12 psi, opposition to fluid flow back to the master cylinder to prevent rarefying the brake fluid. In the absence of the check valve, fluid flows back to the master cylinder at high velocity tending to evacuate brake lines and make fluid less dense. This fluid deficiency must be made up on the next brake application. Pumping the brake pedal usually is required in order to restore pedal height and effectively operate the brake system.

The effect of the condition stated above, low pedal height, is similar to a condition caused by air ingested into a hydraulic brake system. However, the difference is that rarefication causes a void in a brake system, while air ingested into a hydraulic brake system displaces fluid.

Mr. Thomas A. Melton, USA
USAMERDC/DRDME-ME
Fort Belvoir, VA 22060

DRIVING IN ENGLAND

I read your article "A Yank Tank In England" in the May '77 issue with great interest and have a suggestion to make.

While serving in Thailand, which is as backward as Britain when it comes to which side of the road to drive on, I noticed a slight modification to vehicle-mounted side view mirrors that might be of help to drivers of American cars in England. The passenger side mirror was mounted backward; the mirrored surface facing the front of the vehicle. By adjusting the angle of the mirror, the driver can see into oncoming traffic without pulling completely into the adjacent lane.

Capt Timothy P. Drozd, USA
HQ 565th Engineer Battalion
APO New York 09164

Great idea! Thanks for the tip.

INSTALLING DISTRIBUTOR

Here is something you might be able to use in your Safety Highlights. Last night my car caught on fire while I was working on it. Luckily, just 15 minutes prior, my wife had placed our dry chemical fire extinguisher near my work area "just in case." I put the fire out immediately and no damage or injuries occurred.

Here are the details. My car is a '68 Fiat. The engine had overheated and warped the aluminum head. On the night in question I was reinstalling the head after having it shaved and trued. This involves also reinstalling the distributor. The distributor shaft is round and mates to its drive with splines so that it is possible to install it at any firing position on a 360 degree arc. I reasoned that to install it correctly I needed to line up the external timing marks so the number one piston is near top dead center, and line up the distributor rotor with the number one spark plug pin. I overlooked the fact that the external timing marks line up twice during the four-stroke cycle. Once at the proper time and once just as the intake valve is opening. Sure enough, I installed the distributor 180 degrees out-of-phase. The spark plugs fired with the intake valves open. The flame ignited raw gas in the manifold and set the carburetor on fire.

Thank God for my thoughtful wife and her fire extinguisher.

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DON'T DO IT THIS WAY!

Good quality safety stands or ramps are first priority for the backyard mechanic. Good jack stands are not expensive if you watch for sales at discount or parts houses. Ramps are a little safer and easier to use but cost a little more.

Never **get under a car that is supported by a bumper jack alone. Jacks are for emergency use. Cars do slip off of them. People do get killed that way.**